

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION
COAL MINE SAFETY AND HEALTH

AMENDED REPORT OF INVESTIGATION
Surface Coal Mine

Fatal Electrical Accident
August 29, 2004

Williams Electric (N47)

at

Hobet 21 Surface Mine
Hobet Mining, Inc.
Madison, Boone County, West Virginia
I.D. No. 46-04670

Accident Investigators

James R. Humphrey
Coal Mine Safety and Health Inspector/Accident Investigator

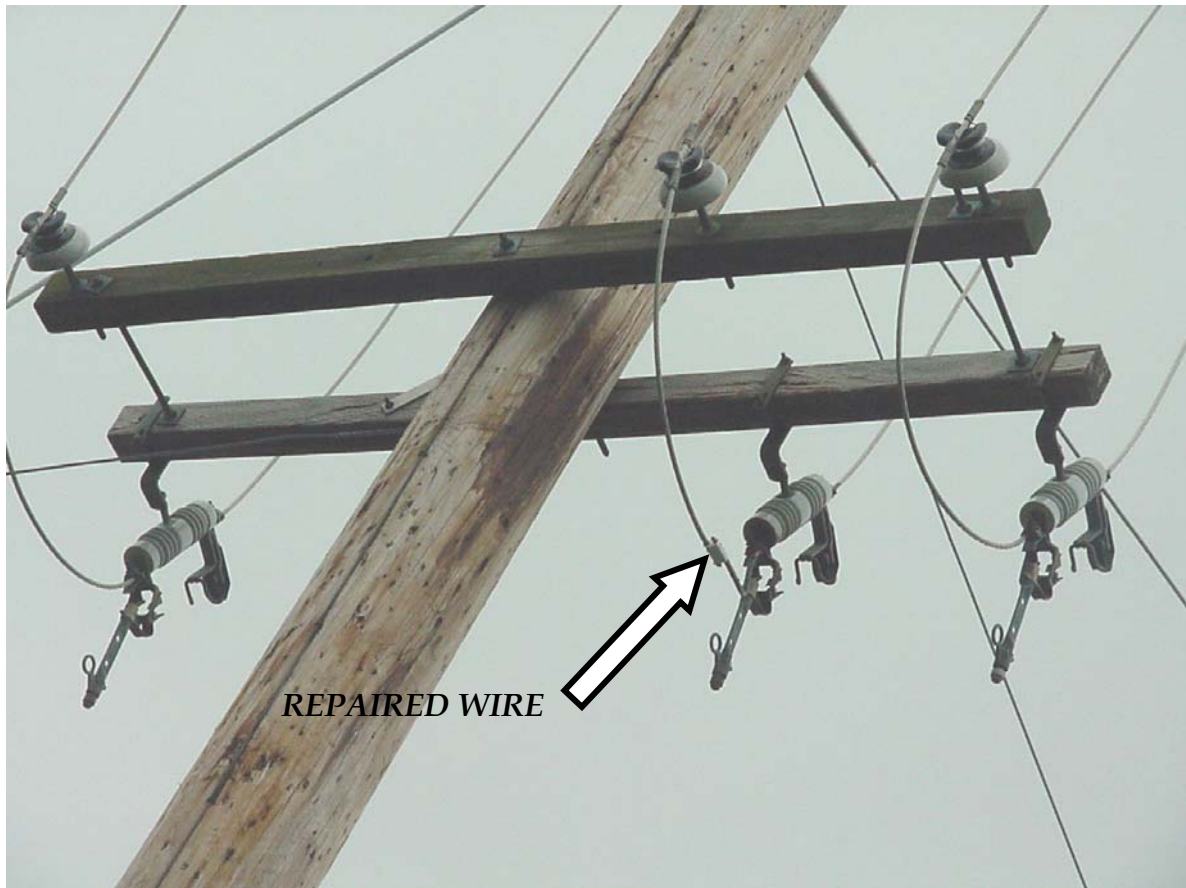
Marcus Smith
Electrical Engineer

Originating Office
Mine Safety and Health Administration
District 4
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Jesse P. Cole, District Manager

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Note: The report was amended on May 16, 2005 to change the following: page 2 – number of production shifts per day changed to three, daily production changed to 14,000 tons, coal conveyance distance changed to 8.5 miles, changed title of Eddie Arnold to Mine Manager and Billy Marcum to Production Superintendent; page 6 – discussion modified to further describe Hobet Mine Management Communications.



OVERVIEW

On Sunday, August 29, 2004, at approximately 11:45 a.m., Michael Copley, a 37-year old Lineman with 3 years experience, received fatal electrical injuries while working near an energized 12,470 volt circuit on a power pole. After hearing an electrical arc, a foreman observed the victim falling from the pole. The foreman immediately performed CPR and the victim was transported by helicopter to Charleston Area Medical Center where he expired on August 30, 2004.

The accident resulted from failure to deenergize, lock out, tag out, and ground the electrical circuit before performing work. Contributing to the accident was a lack of communication between the contractor and operator.

GENERAL INFORMATION

The Hobet 21 Surface Mine located near Madison, near the Boone and Lincoln County Line, West Virginia, is operated by Hobet Mining, Inc. (Hobet), a subsidiary of Arch Coal, Inc. The mine employs 306 persons and normally operates three production shifts per day, seven days per week. An average of 14,000 tons of coal is produced daily from five pits. Coal is transported from the pits by Caterpillar Model 777 coal haulage trucks to raw coal storage areas where the coal is transferred to a conveyor belt system. Coal is transported via the conveyor belt system for a distance of approximately 8.5 miles to the Hobet Preparation Plant.

The principal officers for Hobet are:

Mike Jarrell	President
Eddie Arnold	Mine Manager
Billy Marcum	Production Superintendent
Dennis Wellman	Safety Director

The principal officers for Williams Electrical are:

Harry R. Smith	Vice President
Jerry B. Wilkinson	Electrical Engineer
Bryan Compton	Foreman

The last regular inspection of this operation was completed on August 18, 2004. The Non-Fatal Days Lost (NFDL) incidence rate for the quarter prior to the accident was 2.69 at the Hobet 21 Surface Mine and 2.60 for the nation's surface coal mines. Williams Electric Company Non-Fatal Days Lost (NFDL) incidence rate for the quarter prior to the accident was 0.00.

DESCRIPTION OF THE ACCIDENT

On Saturday, August 28, 2004, at approximately 9:00 a.m., James Caldwell, Production Supervisor, reported a power loss to the Water Tree Pump Station to Lanny Lansden, Maintenance Supervisor. The Water Tree Pump Station is an area where a pump and installation is located to fill the large water trucks that are used to keep the mine's haul roads damp. Lansden directed John Harden, Master Electrician, and Gary Elliott, Electrician, to check the water tree pump. At about 11:30 a.m., Harden and Elliott reported back to Lansden that the electrical power was single phased at the Water Tree Pump Station starting box.

Harden and Elliott located the electrical problem causing the single phased power at approximately 5:30 p.m. Saturday evening. Harden and Elliott reported to Lansden that a fuse link was burned in two on the high voltage line feeding the pump station at a set of pole mounted disconnects near the Pit 18 Truck Dump. Elliott described the damaged condition as an air gap of eight to nine inches existing from the base of the knife switch to where the conductor was ended on the middle phase. Harden recommended that a high voltage crew be obtained to correct the problem. The visible disconnects were in the closed position at the Pit 18 Truck Dump power pole when Harden and Elliott left the area. Lansden told Harden and Elliott to notify Rick Hackney, Warehouse Clerk, of the electrical problem. Harden notified Hackney of the electrical problem. Hackney called Williams Electric and talked to Jerry Wilkinson,

Electrical Engineer for Williams Electric. Hackney told Wilkinson that they had problems with high voltage and told him the approximate location of the problem.

Wilkinson called Harry Smith, Vice President of Williams Electric, about 8:30 p.m. Saturday and explained that high voltage repairs needed to be made on Sunday to the Berry Branch Line (Water Tree Station line). Williams Electric had installed the high voltage power lines on Hobet mine property and named this particular line Berry Branch Line. This 12,470 volt distribution line once fed electrical power to an underground mine called Berry Branch.

On Sunday, August 29, 2004, at approximately 8:00 a.m., Smith called Bryan Compton, Foreman for Williams Electric, and notified Compton that high voltage repair work needed to be done on Hobet Mining property. Compton made arrangements to take Michael Copley, Lineman, with him to Hobet Mining to conduct the repair work.

Stephanie Linville, Security Guard, met Compton and Copley at the guard gate at approximately 10:50 a.m. Compton and Copley stated that there was a possible power outage at the Berry Branch Line. No one on mine property was informed of Williams Electric employees arriving to do the high voltage repair work. Compton and Copley proceeded up the hill on mine property just past the preparation plant and met Robert DeHart, Preparation Plant Superintendent. Compton explained to DeHart that someone had called and said that there was a line out on the Berry Branch Line (Water Tree power line). DeHart was unaware of the electrical problem. At approximately 11:00 a.m., DeHart traveled down to the preparation plant and called Hackney who confirmed that a high voltage problem existed on that side of the mine property. DeHart told Hackney that he would send the two employees of Williams Electric to the Warehouse.

DeHart told Compton not to knock power because a vulcanized conveyor belt splice was still being heated. At this time DeHart did not know that the high voltage power could be deenergized at the high voltage repair site without affecting the vulcanized splice installation. DeHart told Compton to report to the warehouse so a foreman could accompany them. He also told Compton to be sure and contact him before pulling any power so it would not mess up the vulcanized belt splice.

Compton told DeHart that he was going to drive the line and check the high voltage power lines first. Compton stated that normally one of Hobet's hourly electricians would accompany him, and if power had to be deenergized, both parties would lock out the disconnects. This was a long-standing agreement. However, an hourly electrician was not made available to Compton. Compton and Copley traveled toward the Pit 18 Truck Dump. Compton and Copley passed a substation approximately ½ mile before arriving at Pit 18 Truck Dump. They also passed a set of pole mounted disconnects located ¼ mile away from the Pit 18 Truck Dump. The high voltage power at the location where the repairs were required could have been deenergized at either of these two locations.

Compton and Copley, arriving at the Pit 18 power pole, observed the burned wire at the bottom of the pole mounted disconnect. They proceeded to work without notifying Hobet 21 Surface Mine (Hobet 21) personnel. Compton retrieved the hot stick, an insulated tool used to open and close certain pole-mounted disconnects, from the service truck and pulled the cut-outs (disconnects) open. Compton retrieved a piece of copper wire out of the truck and peeled the

outer jacket off of each end of the wire. Compton stated that one end of the wire needed to be entered into the bottom bracket of the disconnect, and the other end needed to be spliced to the high voltage phase wire which had burned in two.

Copley then climbed the power pole to make the connections. Grounding jumpers were not hooked to the high voltage lines on the deenergized side of the disconnects prior to conducting the repair work. Copley performed the electrical work within close physical proximity to high voltage. Although the Williams Electric employee handbook and safety manual states on page 4, item 13, that “a certified electrician will perform all electrical work according to MSHA standards,” Copley was not a certified electrician. Compton observed Copley performing the electrical work in close physical proximity to the line side of the disconnects which were energized with 12,470 volts.

Compton, standing near the power pole watching the completion of the repair work, turned and started walking toward the truck. After taking several steps Compton heard an electrical arc. Copley had come in contact with high voltage electricity. Compton turned toward the power pole and observed Copley falling down it. Copley leaned back and slid down the pole. At ground level, Compton unbuckled Copley’s safety belt and found that Copley was faintly breathing. Compton went to the truck, called Smith on his cell phone, and told him to call for an ambulance. Compton returned to Copley and began performing Cardiopulmonary resuscitation.

Security Guards Dale Hager and Ralph Coffee, employees of Unlimited Securities, who were patrolling Hobet Mining property, came upon the accident scene. Shortly afterward, other mining personnel arrived to help. The Boone County Ambulance Authority arrived at the accident scene and transported Copley to another location on mine property. A Health Net helicopter transported Copley to Charleston Area Medical Center where he was placed on life support. Upon removal of life support, Copley was pronounced dead at 3:45 p.m. on Monday, August 30, 2004.

INVESTIGATION OF THE ACCIDENT

The Mine Safety and Health Administration field office supervisor, Terry Price, was notified at 2:29 p.m., August 29, 2004, of the accident by Dan Morgan. George Nelson, Coal Mine Safety and Health Inspector from Madison Field Office, was dispatched to the accident scene. Nelson was later joined by James Humphrey, Accident Investigator, and Marcus Smith, Electrical Engineer, from the MSHA Mount Hope office. Nelson provided the operator with a written copy of the 103(k) Order, and preliminary information was gathered.

On August 30, 2004, an onsite investigation of the accident scene began in cooperation with the West Virginia Office of Miners’ Health, Safety and Training (WVMHST), the mine operator and employees, and UMWA safety officials that work on mine property. Arlie Massey, Electrical Engineer, from the MSHA Technical Support Group in Triadelphia, West Virginia; along with Preston White, Education and Field Services, National Mine Health and Safety Academy, Beckley, West Virginia; joined the investigation. Sixteen persons were interviewed during the investigation.

DISCUSSION

Training

Michael Copley was on Hobet property on February 18, 2004, as an employee of the independent contractor, Williams Electric. Copley had signed the Hazard Training Sheet and Hobet's Release and Indemnity-Hobet 21 & 23 Complex form before entering Hobet Mining, Incorporated's property. The release was dated February 18, 2004. Copley's application for employment with Williams Electric that is retained by American Staffing, Incorporated, indicates that Copley signed the application for employment on February 20, 2004. American Staffing, Inc. handles the payroll for Williams Electric.

Williams Electric was unable to furnish MSHA personnel with a 5000-23 form showing Copley received Task Training as a Lineman, as required by Section/Part 48.27 of 30 CFR.

A 5000-23 form was submitted to MSHA showing Copley received Annual Refresher Training and Hazard Communication training on February 23, 2004, through Pra-Mac Enterprises, Inc. Also, a 5000-23 form was submitted showing Copley received Annual Refresher Training and Section/Part 77-100 of 30 CFR on August 14, 2004, through Kenneth Ayers, instructor, under contractor identification number 3UB.

Certificates submitted showed Copley had a Certified Surface Miner's Certificate for the Commonwealth of Kentucky and an Apprentice Surface Miner's Certificate from the State of West Virginia, date of issue October 18, 1994, which had expired October 1995. No evidence could be found to indicate that Copley was a certified electrician.

The operator proved hazard training to the contract employees, from the Security Officer before entering mine property. This was the general training given to all contractors and vendors.

Copley, as well as other employees of Williams Electric, was incorrectly task trained. They were trained that it is safe to perform work on high voltage power after only deenergizing the set of disconnects mounted on the same pole where the repair work is to be performed. Compton and a Williams Electric supervisor, Harry Smith, stated that it is normal company policy to perform repairs this way. They indicated that the procedure is appropriate, and that they train their employees to do it this way.

Procedure for Disconnecting, Locking, Tagging, Deenergizing, and Grounding

All work performed on mine property is done by the hourly work force except for specialty work, such as power line and high voltage work. When high voltage work is being performed by independent contract workers, they are normally accompanied by a Hobet hourly electrician. The hourly electrician will open the disconnecting device(s) and lock and tag the device(s). The contract worker, who performs the electrical work, will also lock and tag the device(s). This is a long-standing policy on Hobet Mining's property. Prior to the accident, arrangements for an hourly electrician to accompany the contractors while on mine property were not immediately addressed when a representative of mine management first met the contract employees.

The high voltage power was deenergized at the set of disconnects mounted on the same pole where the repair work was performed. The sole use of these disconnects was not appropriate because this caused the repair work to be conducted in very close proximity to energized high voltage components. The repair work consisted of entering a piece of copper wire into the mounting device on the bottom of an insulator which is part of the disconnect, and splicing this copper wire to the existing line. The contract employees passed two locations where the high voltage power could have been deenergized, locked and/or tagged, while traveling to the site to conduct the electrical repair work. They passed a substation located approximately ½ mile from the work site, and also passed a set of disconnects mounted on a power pole approximately ¼ mile from the work site. The disconnects located ¼ mile away were inaccessible. Shrubbery and brush had grown around this pole making them unable to be used.

The victim performed the electrical work within close physical proximity to energized high voltage power (approximately 11" from 12,470 volts). The line side of the disconnect where the copper wire was entered into the clamp of the insulator of the center disconnect was energized. Compton, Foreman for Williams Electric, stated that it was more convenient to deenergize the immediate disconnects than to bother anyone else to make the repairs. Compton and a Williams Electric supervisor, Harry Smith, stated that it was normal company policy to perform repairs this way. They stated that the procedure is appropriate, that they train their employees to do it this way, and that they would do it again that way. Making the repairs in this manner would only take approximately 30 minutes. Compton, while working with Williams Electric on Hobet Mining Properties, had knowledge of the lay-out of the high voltage power lines, disconnects, and other electrical installations. Compton knew that it would take longer to locate Hobet personnel and deenergize power at another location than to just deenergize the immediate disconnects and complete the repair work. After opening the disconnects, Compton did not properly ground the deenergized end of the high voltage line before work was performed on the broken high voltage wire.

Hobet Mine Management Communications

Hobet Mine Management did not communicate with the Security Officers concerning the high voltage problem on Hobet 21 mine property. When Compton and Copley arrived at the guard gate, the Security Officer recognized them. They had performed high voltage work on Hobet property prior to this day. The Security Officer allowed the two men to enter mine property without first notifying Hobet Mine Management personnel. Hobet's policy requires that the Security Officer notify Hobet personnel when a vendor, salesperson, or anyone else arrives on mine property to ensure that that person is expecting them.

Communication between mine management officials that were responsible for different areas on mine property did not take place concerning the high voltage problems. DeHart, Preparation Plant Superintendent, had arranged to replace an overland conveyor belt and make vulcanized splices, a repair which requires electrical power, at the same time the high voltage repair work was to be performed. DeHart did know that Hobet 21 had a high voltage problem on mine property. DeHart informed the contractors that he was in the process of heating a vulcanized splice, and before power could be deenergized, he would have to be notified. Dehart did not know that high voltage power could have been deenergized to the area of the repairs without affecting the installation of the vulcanized splice. DeHart told the contractors to report to the

warehouse. Supervisors, Mark Runyon, James Caldwell, and Daniel Morgan, who would have been responsible persons to contact or accompany the contract employees, were not aware that Williams Electric employees had entered mine property. The contract employees had completed the repair work, and the fatal injury had occurred before Hobet 21 supervisors knew that these contract employees were on mine property.

ROOT CAUSE ANALYSIS

A root cause analysis was conducted to identify the most basis causes of the accident that were correctable through reasonable management controls. During the analysis, casual factors were identified that, if eliminated, would have either prevented the accident or mitigated its consequences. Listed below are causal factors identified during the analysis and their corresponding corrective actions implemented to prevent a recurrence of the accident.

Causal Factor: Proper procedures were not followed in disconnecting, locking out, tagging, deenergizing, and grounding the 12, 470 VAC circuit before electrical work was performed on the effected electric equipment and lines.

Corrective Action: The Contractor, Williams Electric, shall address the proper procedures for disconnecting, locking out, and tagging before electrical work is performed on the effected electrical equipment and lines. Under Hobet's newly adopted policy (Electrical High Voltage Contractor Safety Program) a Hobet supervisor will go to the site of the electrical problem and discuss the contractor's plan to safely perform the repair. The contractor will be given information on the electrical distribution system for that area. The Manager of Safety for Hobet will provide the contractor with any Safe Job Procedures that Pertain to the electrical work that they are doing. The contractor will be expected to comply with the Safe Job Procedures while on Hobet's property.

Causal Factor: Michael Copley was incorrectly task trained by Williams Electric. They were trained that it is safe to perform work on high voltage power after deenergizing the set of disconnects mounted on the same pole where the repair work is to be performed. Compton and a Williams Electric supervisor, Harry Smith, stated that it is normal company policy to perform repairs this way. Also Williams Electric could not provide MSHA personnel with a 5000-23 form to indicate that Michael Copley received Newly Employed Experience Miner Training, and Task Training.

Corrective Action: Training records were reviewed and all persons with training deficiencies received additional training as required. In addition, a new policy was implemented by Hobet Mining, addressing the training of independent contractors performing work on mine property under Section A, Part II and III-IV. Hobet is to receive the independent contractor's MSHA Training Plan Approval Letter prior to the independent contractor performing work on Hobet property. Hobet is to receive a list of all contract employees' training and a list of their certification numbers, certified by MSHA and WVOMHST, to make pre-shift and on-shift examinations and to perform electrical work.

Causal Factor: Contractor employees entering mine property, proceeded to the work site, and performed repairs without making contact with the operator.

Corrective Action: The operator has adopted new policy which is outlined in Section B, Part II of the training plan titled, “Contractor Arrival at Hobet Mining, Inc.” Williams Electric must stop at the security office at either Mud River or the Shaffer Road exit of U.S. 119 and check in with the security officer. The contractor must inform the security officer if they are to report to Hobet 23 Beth Station Preparation Plant Office or the Mud River Warehouse Office. If the contractor is unable to provide this information to the security officer, they will not be logged in and allowed on the property until the security officer is able to ascertain the contractor’s destination. If the contractor employees have not been hazard trained, the security officer will provide hazard training, log the individuals in, and have them sign and date a form attached as: High Voltage Electrical Contractor Check-In/Out Form. Upon arrival at the appropriate location, the Mine Clerk, Warehouse Clerk, or authorized employee will notify the Supervisor in charge of the electrical repair or project.

Causal Factor: Hobet 21 management was not aware that contract employees were on mine property to make the high voltage line repair. DeHart, Preparation Plant Manager, was the first and only person of Hobet’s management team that met the contract employees on mine property. DeHart explained to the contractors that he was in the process of vulcanizing an overland conveyor belt and that power could not be interrupted at that time. DeHart also told Compton to report to the warehouse so a foreman could accompany them, however Compton proceeded with the repair before reporting to the warehouse. This may be the reason why the incorrect set of disconnects were pulled at the repair site.

Corrective Action: Hobet’s new training plan prevents communication problems. Upon arrival, a contractor must stop at a security office and notify the security officer of their destination. Upon arrival at the appropriate location, the Mine Clerk, Warehouse Clerk, or other authorized employee will notify the Supervisor in charge of the project. In addition, prior to performing any high voltage power line electrical repairs or maintenance, a Hobet supervisor will distribute a copy of safe work procedures to each high voltage power line electrical contractor and review it with them. Copies of this procedure will be issued to the Mine Manager and Preparation Plant Manager and reviewed with all Hobet supervisory employees.

Causal Factor: The victim, an uncertified person and an employee of Williams Electric, performed electrical work within close proximity to energized high voltage. Electrical power was deenergized at the pole mounted disconnects where the repair was being made rather than the substation or a set of disconnects located ¼ mile away from the Pit 18 Truck Dump.

Corrective Action: Williams Electric’s Employee Handbook & Safety Manual addresses electrical work performed on page 4 (Awareness-Work Rules), line 13: A certified electrician will perform all electrical work according to MSHA standards. Hobet’s new policy and safety procedures for independent contractors performing electrical work on mine property is addressed in Part B, Section III of the training plan. The supervisor in charge of the electrical repair will request to see the contractor employees’ electrical certification cards and a photo ID of all contractor employees who will be performing work for which certification is necessary. All affected persons were retrained in these requirements.

CONCLUSION

The accident resulted from failure to follow the proper procedures for disconnecting, locking out, tagging, deenergizing and grounding the electrical circuit before performing work. Contributing to the accident was a lack of communication between the contractor and operator.

Approved By:

ORIGINAL SIGNED BY

Jesse P. Cole
District Manager

MAY 16, 2005

Date

ENFORCEMENT ACTIONS

1. A 103(k) Order No. 7234080 was issued to Hobet Mining, Inc. on August 29, 2004, to ensure the safety of persons until an investigation of the accident could be completed.
2. A 103(k) Order No. 7229053 was issued to Williams Electric on August 30, 2004, prohibiting employees of Williams Electric from performing electrical work on Hobet Mining, Inc. property to ensure the safety of persons until an investigation of the accident could be completed.
3. A 104(d)(1) Citation No. 7237313 was issued to Williams Electric Co. for a violation of 30 CFR 77.704-1(b). All power circuits were not deenergized on the Pit 18 Truck Dump power pole where electrical repairs were being performed by Michael Copley, Lineman for Williams Electric. The line side of the disconnects on the power pole remained energized at 12,470 VAC while repairs were made. Copley, non-certified electrician, while during the repair work, was under the direct supervision of Bryan Compton, Foreman for Williams Electric.
4. A 104(d)(1) Order No. 7237314 was issued to Williams Electric Co. for a violation of 30 CFR 77.501. The disconnecting devices were not locked out and suitably tagged by the person who performed electrical work on the high voltage line disconnects at the Pit 18 Truck Dump power pole where electrical repairs were being performed by Michael Copley, Lineman for Williams Electric.
5. A 104(d)(1) Order No. 7237315 was issued to Williams Electric Co. for a violation of 48.27(c). Williams Electric failed to instruct linemen in safe work procedures while working on high voltage lines. They trained their linemen that it is safe to perform work on high voltage power after only deenergizing the set of disconnects mounted on the same pole where the repair work is to be performed.
6. A 104(d)(1) Order No. 7237316 was issued to Williams Electric Co. for a violation of 30 CFR 77.704. Bryan Compton, Foreman for Williams Electric, while on Hobet Mine property, did not properly deenergize and ground the high voltage lines before work was performed on a broken high voltage wire where the middle high-voltage phase burned in two at a set of visible disconnects.

APPENDIX A

List of persons furnishing information and/or present during the investigation:

Hobet Mining, Inc.

Michael Jarrell General Manager/President
Robert DeHart.....Preparation Plant Superintendent
Thomas HaganMaintenance Manager
Dennis Wellman..... Safety Director
Alvin L Gleason..... Safety/Labor Manager
Mark Heath Counsel for Hobet Mining, Inc.

Arch Coal

Tony Bumbico Safety Director

Hobet Mining, Inc. UMWA Personnel

Ronald Pauley Safety Representative
Kelly Elswick..... Safety Representative
James Linville Chairman of Safety Committee
Rick Ryan..... Safety Representative
Kenneth Smith Safety Representative

Williams Electric Co.

Harry Smith..... Vice President
Jerry B. WilkinsonElectrical Engineer
Bryan Compton..... Foreman

West Virginia Office of Miner's Health, Safety, and Training

Terry Farley Accident Investigator
Eugene White.....District Inspector
Randall Bailey..... Surface Inspector
Glenn E. Fields..... Electrical Inspector

Mine Safety and Health Administration

Jesse P. Cole..... District Manager
Chris Weaver Acting Chief, Tri-State Initiative
Terry PriceSupervisory Coal Mine Safety and Health Inspector
James R. HumphreyAccident Investigator/
Coal Mine Safety and Health Inspector
Marcus Smith.. Electrical Engineer/Coal Mine Safety and Health Inspector
Arlie Massey Electrical Engineer, Technical Support
Preston T. WhiteEducation and Training